im Vertrieb von CAMBOARD Electronics

# Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

## User's Manual

# *MDA 2V EQ, MDA 4V EQ, and MDA 4SV EQ*

**VersaTools® Video Mini Distribution Amplifiers**

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# Precautions

## Safety Instructions • English

**This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.**

**This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.**

### Caution

**Read Instructions** • Read and understand all safety and operating instructions before using the equipment.

**Retain Instructions** • The safety instructions should be kept for future reference.

**Follow Warnings** • Follow all warnings and instructions marked on the equipment or in the user information.

**Avoid Attachments** • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

## Consignes de Sécurité • Français

**Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).**

**Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.**

### Attention

**Lire les instructions•** Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

**Conserver les instructions•** Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

**Respecter les avertissements** • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

**Eviter les pièces de fixation** • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

## Sicherheitsanleitungen • Deutsch

**Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.**

**Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.**

### Achtung

**Lesen der Anleitungen** • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

**Aufbewahren der Anleitungen** • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

**Befolgen der Warnhinweise** • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

**Keine Zusatzgeräte** • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

## Instrucciones de seguridad • Español

**Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.**

**Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.**

### Precaucion

**Leer las instrucciones** • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

**Conservar las instrucciones** • Conservar las instrucciones de seguridad para futura consulta.

**Obedecer las advertencias** • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

**Evitar el uso de accesorios** • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

### Warning

**Power sources** • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

**Power disconnection** • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

**Power cord protection** • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

**Servicing** • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

**Slots and openings** • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

**Lithium battery** • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

### Avertissement

**Alimentations•** Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

**Déconnexion de l'alimentation•** Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

**Protection du cordon d'alimentation** • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

**Réparation-maintenance** • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

**Fentes et orifices** • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

**Lithium Batterie** • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

### Vorsicht

**Stromquellen** • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

**Stromunterbrechung** • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

**Schutz des Netzkabels** • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

**Wartung** • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

**Schlitze und Öffnungen** • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

**Litium-Batterie** • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

### Advertencia

**Alimentación eléctrica** • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

**Desconexión de alimentación eléctrica** • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

**Protección del cables de alimentación** • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

**Reparaciones/mantenimiento** • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

**Ranuras y aberturas** • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

**Batería de litio** • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterias usadas siguiendo las instrucciones del fabricante.

# FCC Class A Notice

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

# Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America, and Central America:**

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

**Europe, Africa, and the Middle East:**

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

**Asia:**
Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

**Japan:**
Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

***If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.***

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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## 安全须知 • 中文

这个符号提示用户该设备用户手册中的操作和维护说明。



这个符号警告用户该设备机壳内暴露的危险电压，有触电危险。

### 注意

**阅读说明书** • 用户使用该设备前必须阅读并理解有安全和使用说明。

**保存说明书** • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

**避免追加** • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

### 警告

**电源** • 该设备只能使用产品上标明的电源。 设备必用有地线供电系统供电。第三条线（地线）是安设施，不能不用或跳过。

**拔掉电源** • 为安全地从设备拔掉电源，请拔掉所有备后或桌面电源的电源线，或任何接到市电系统电源线。

**电源线保护** • 妥善布线， 避免被踩踏，或重物挤压。

**维护** • 所有维修必须由认证的维修人员进行。 设备部没有用户可以更换的零件。为避免出现触电危不要自己试图打开设备盖子维修该设备。

**通风孔** • 有些设备机壳上有通风槽或孔，它们是用防止机内敏感元件过热。不要用任何东西挡住通风孔。

**锂电池** • 不正确的更换电池会有爆炸的危险。 必须使与厂家推荐的相同或相近型号的电池。按照生产厂的

议处理废弃电池。

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# Quick Start Guide — MDA EQ Series

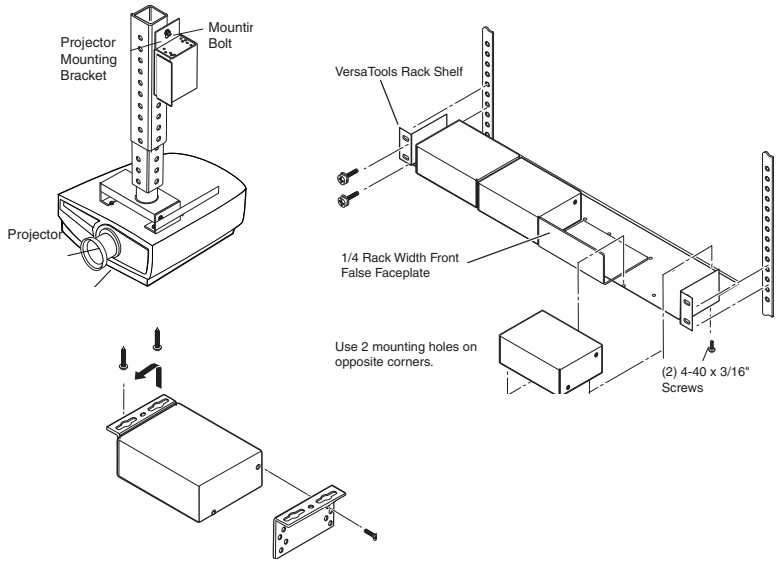
To install and set up an MDA EQ Series mini distribution amplifier, follow these steps:

## *Step 1*

**Turn all of the equipment off** and disconnect it from the power source.

## *Step 2*

**Mount the MDA EQ** on a projector, under a desktop, or on a rack shelf, as illustrated below. (The illustration shows a VersaTools® rack shelf; you can also use the 9-inch or 6-inch deep Universal or basic 19-inch rack shelves. See *Optional Accessories* in appendix A.) See *Mounting the MDA EQ Series* in chapter 2 for more options.




## *Step 3*

**Wire the MDA EQ power cord and connect it.** To wire the power cord, follow these steps, referring to the illustration on the next page.

**a**. Cut the DC output cord to the length needed.

**b**. Strip the jacket to expose 0.3 inches (7 mm) of the conductors.

**c**. Slide the leads into the supplied captive screw plug and lock them, using an Extron Tweeker (small screwdriver).

**d**. Use the supplied tie-wrap to strap the power cord to the extended tail of the connector.

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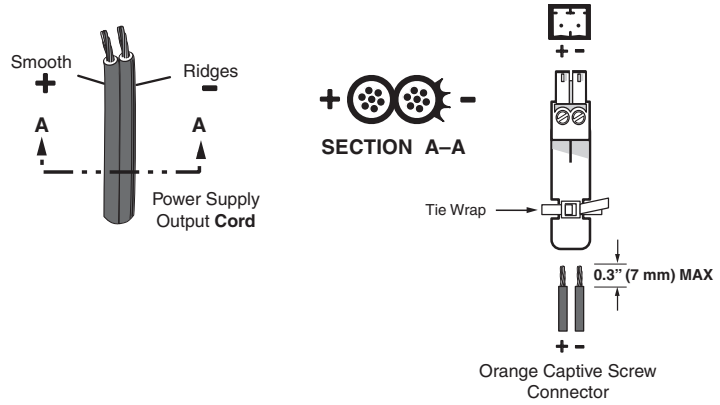



***Wiring the power cord***

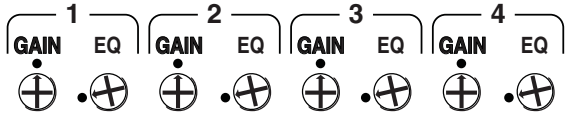
## Step 4

**Connect power cords to the input and the outputs, and turn on the equipment**.

## Step 5

**Adjust the potentiometers for the outputs**, using an Extron Tweeker.

**If using very short output cables**, set all potentiometers to the default setting (the arrow on the potentiometer pointing to the dot beside it; see the illustration below).




***Potentiometers at default settings***

**If using long cables**, follow these steps:

**a**. Supply the Color Bars test signal to the input. (It is recommended that you use an Extron VTG 300 Video Test Generator to generate the test signal.)

**b**. Adjust the Gain pot for output 1 until the signal level at the far end is the same as the input (or the display shows the correct brightness and contrast).

**c**. Adjust the EQ pot for output 1 so that no overshoot or round front corner appears at the far end on the scope (or you see a sharp picture with no smearing).

**d**. Repeat steps **b** and **c** for the rest of the outputs.



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# Chapter One

## Introduction

About this Manual

About the MDA EQ Series Mini Distribution Amplifiers



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## About this Manual

This manual provides information on the Extron VersaTools® MDA EQ series video distribution amplifiers and discusses how to install and operate them.

## About the MDA EQ Series Mini Distribution Amplifiers

The Extron MDA EQ series are compact composite video and S-video mini distribution amplifiers with individual output gain and equalization controls that compensate for different cable lengths for each output. (Each adjustment on the MDA 4SV EQ model equalizes two outputs.) The MDA EQ products are also line drivers, able to handle 1000 feet of Extron Mini HR cable.

### Models

**MDA 2V EQ —** One input, two outputs, composite video with equalization and gain controls for each output

**MDA 4V EQ —** One input, four outputs, composite video with equalization and gain controls for each output

**MDA 4SV EQ —** One input, four outputs, S-video with luma (Y) equalization control, and luma and chroma gain controls for every two outputs

### Features

**Individual equalization and gain controls —** Gain and equalization (EQ) adjustments allow optimized compensation for outputs with various cable lengths for different applications.

**Video loop-through —** All models feature a 75 ohm video loop-through connector, which provides for local monitoring and cascading to another distribution amplifier.

**Power supply —** An external desktop 12 VDC power supply with a two-pin captive screw connector accepts 100 to 240 VAC input.

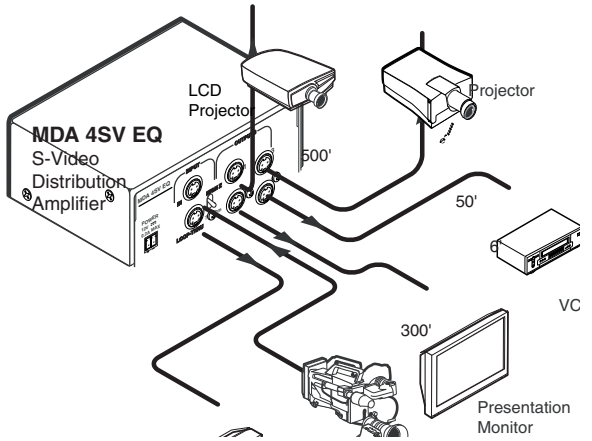
**Enclosure —** All models have the light, compact VersaTools 1U quarter rack enclosure, three inches in depth.

**Rack, projector, and furniture mountability —** All models can be mounted on a rack shelf, under a desk or podium, or on a projector.

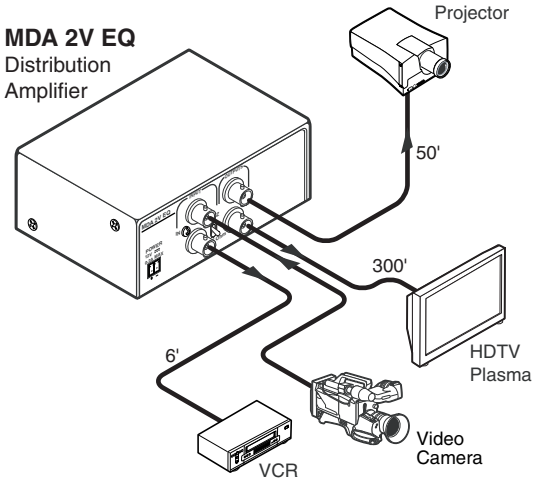
**Global accessibility** — Quad compatibility and universal power supply enables the MDA EQ to be used worldwide.

## Connection diagrams

The following diagrams give examples of how the various supported devices can be connected to an MDA EQ series product. (These diagrams show connections for the MDA 2V EQ and the MDA 4SV EQ). Use them as guides for all MDA EQ connections.




***Example of devices connected to an MDA 4SV EQ***




***Example of devices connected to an MDA 2V EQ***



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# Chapter Two

## Installation and Operation

Mounting the MDA EQ Series

Rear Panel Features and Cabling

Front Panel Features and Operation


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## Mounting the MDA EQ Series

The MDA EQ mini distribution amplifiers can be set on a table; mounted on a rack shelf; attached to a projector; or mounted under a desk, podium, or tabletop.

The following kits are available for mounting the MDA EQ:

- RSB 123 1U, 3.5" deep basic VersaTools rack shelf (part #60-604-20)
- RSF 123 1U, 3.5" deep VersaTools rack shelf kit (part #60-190-20)
- RSB 126 1U, 6" deep basic rack shelf (part #60-604-10)
- RSU 126 1U, 6" deep universal rack shelf kit (part #60-190-10)
- RSB 129 1U, 9.5" deep basic rack shelf (part #60-604-01)
- RSU 129 1U, 9.5" deep universal rack shelf kit (part #60-190-01)
- MBU 123 mini under-desk mounting bracket kit (part #70-212-01)
- VersaTools projector mounting kits: PMK 100 (part #70-367-01), PMK 300 (part #70-374-01), or PMK 350 (part #70-563-02 or 70-563-03).

### Tabletop use

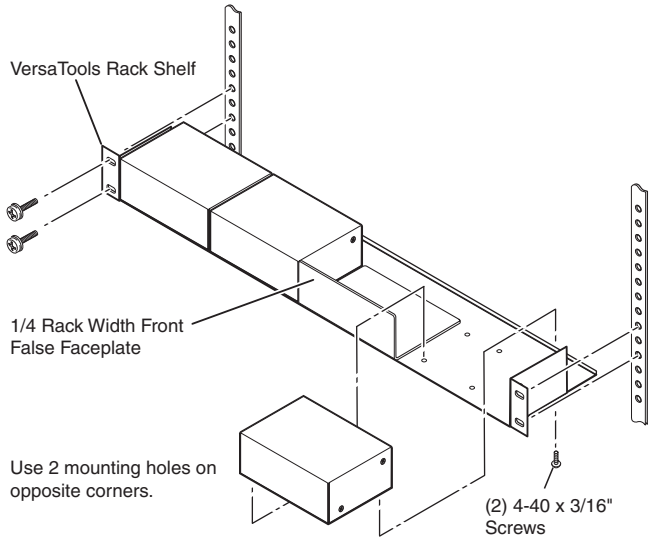
Four self-adhesive rubber feet are included with the MDA EQ. For tabletop use, attach one foot at each corner of the bottom side of the unit and place the unit in the desired location.

### Rack mounting

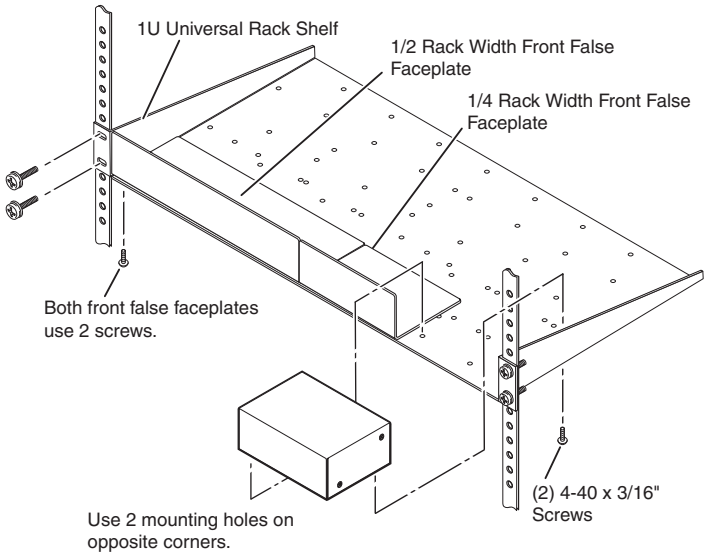
For optional rack mounting, mount the MDA EQ on one of the rack shelves or projector mounting brackets listed above. On the standard 9.5" deep rack shelves, the unit can be mounted in one of four locations to the rear of the rack or in one of four locations to the front of the rack.

**NOTE** *Only products in the VersaTools and IP Link lines can be mounted on a VersaTools shelf. Any 1U rack-mountable Extron product can be mounted on the standard shelf.*

1. If rubber feet are installed on the bottom of the MDA, remove them.
2. Mount the MDA EQ on the rack shelf, using two 4-40 x 3/16" screws in opposite (diagonal) corners to secure the unit to the shelf.
3. Install blank panel(s) or other unit(s) on the rack shelf.




***Mounting MDAs on a VersaTools rack shelf***


1U Universal Rack Shelf
1/2 Rack Width Front False Faceplate
1/4 Rack Width Front False Faceplate
Both front false faceplates use 2 screws.
Use 2 mounting holes on opposite corners.
(2) 4-40 x 3/16" Screws

***Mounting an MDA EQ on a standard rack shelf***



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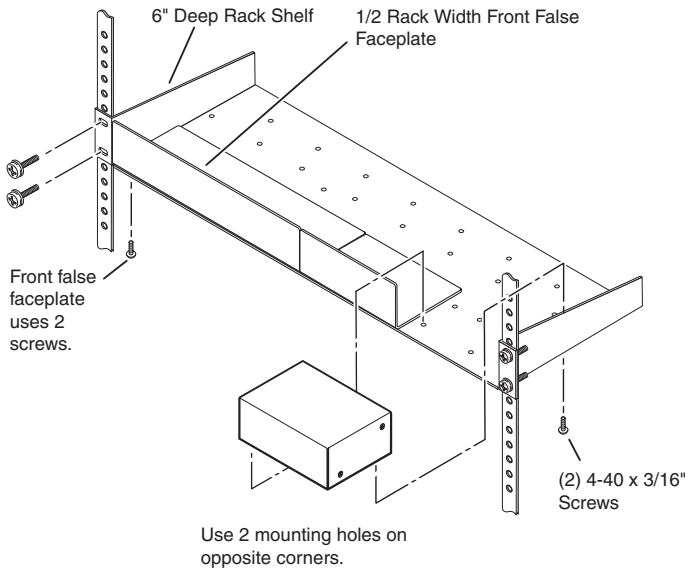
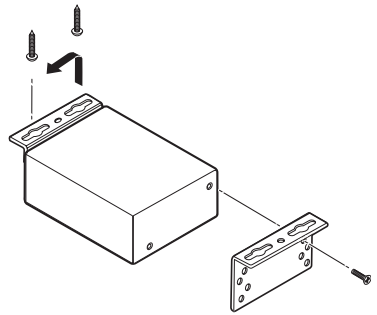

6" Deep Rack Shelf
1/2 Rack Width Front False Faceplate
Front false faceplate uses 2 screws.
(2) 4-40 x 3/16" Screws
Use 2 mounting holes on opposite corners.

***Mounting an MDA EQ on a 6-inch rack shelf***

## Furniture mounting

To furniture-mount the MDA EQ, use the optional MBU 123 mini under-desk mounting kit (part **#70-212-01**), as follows.



***Preparing the MDA EQ for under-desk mounting***

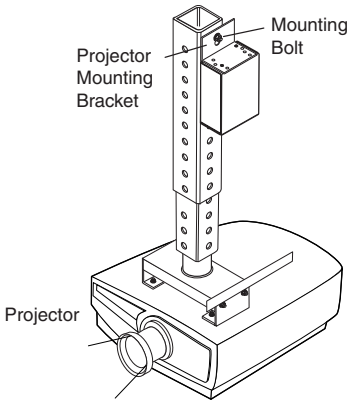
1. If rubber feet were previously attached to the bottom of the unit, remove them.
2. Attach the mounting brackets to the MDA EQ with the provided machine screws as shown in the previous figure.
3. Hold the unit with the attached brackets against the underside of the table or other furniture. On the mounting surface, mark the location of the bracket's screw holes.
4. Drill 3/32" (2 mm) diameter pilot holes, ¼" (6.3 mm) deep in the mounting surface at the marked screw locations.
5. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until slightly less than ¼" of the screw head protrudes.
6. Align the mounting screws with the slots in the brackets and place the unit against the surface, with the screws through the bracket slots.
7. Slide the unit slightly forward or back, then tighten all four screws to secure it in place.

## Projector mounting

To projector-mount the MDA EQ, use one of the optional mounting kits described in the following sections.

### PMK 100 Mini Projector Mounting Kit

The PMK 100 is a projector mounting kit (part **#70-217-01**) designed for use with Extron 1U high, quarter-rack width products like the VersaTools products. It allows them to be mounted near or on a projector support.




***Projector-mounting the MDA EQ using the PMK 100 Projector Mounting Kit***

Follow these steps to projector-mount the MDA EQ using the PMK 100 kit:

1. If rubber feet are attached to the bottom of the MDA EQ, remove them.



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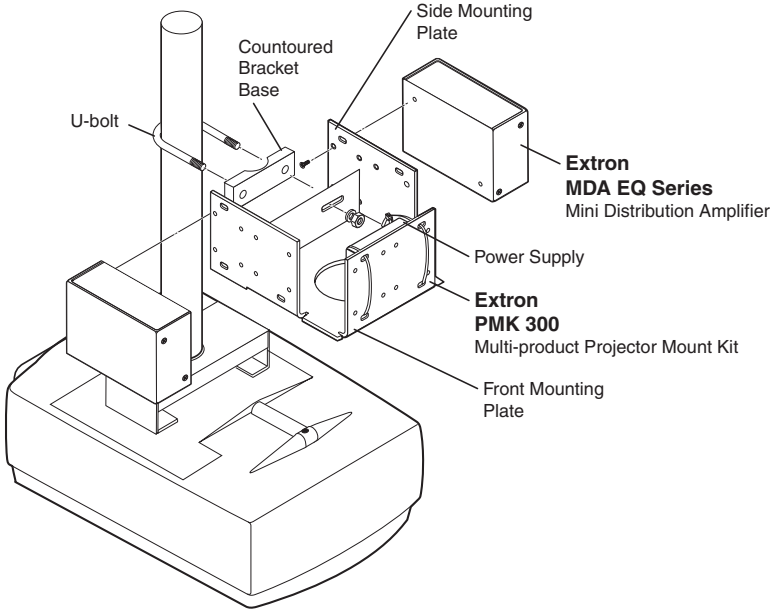
2. Attach the projector mounting bracket to the side of the MDA EQ, using the provided machine screws.
3. Secure the unit to a projector mount or other surface by inserting the mounting bolt through the bracket's slotted hole.

See the illustration on the previous page.

### PMK 300 Projector Mounting Kit

The PMK 300 Multi-Product Projector Mounting Kit (**#70-374-01**) mounts up to three quarter-rack width products to a projector ceiling mount pole. The MDA EQ can be mounted above the display device with the front panel facing either down or up. The quarter rack width plate can also be used to mount the MDA external desktop power supply.

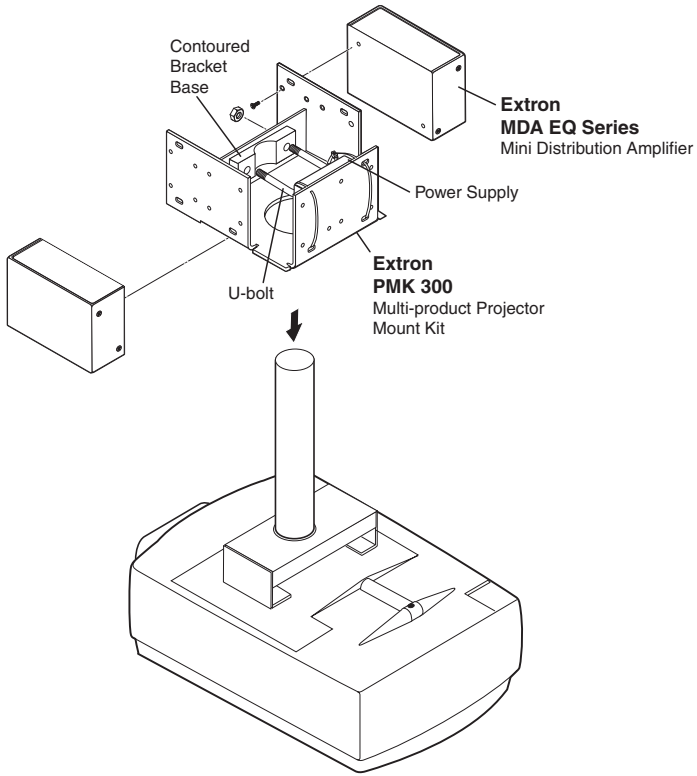



***Projector-mounting the MDA EQ using the PMK 300 Projector Mounting Kit***

Follow these steps to mount the MDA EQ using the PMK 300:

1. If necessary, remove the feet from the bottom of the MDA.
2. Mount the MDA to one of the bracket's three mounting plates, using two of the supplied 4-40 x 3/16" screws in opposite (diagonal) corners to secure the device to the bracket. It can be vertically mounted facing either up or down. See the illustration, above.
   - On the **side** mounting plates, the MDA is typically mounted on the **outside** of the bracket.
   - On the **front** mounting plate, the device is typically mounted on the **inside** of the bracket.
3. Using the two included tie wraps, strap the power supply to one of the brackets.
4. Place the contoured bracket base against the projector ceiling pole and opposite the back plate. The pole should fit snugly into the depression in the center of the contoured base.

**NOTE** *The PMK 300 has a hole in the bottom plate that allows the projector pole to be inserted through the center of the plate, rather than outside of the plate (see the illustration on the next page). To install the PMK 300 in this configuration, slide the bracket up from the bottom of the pole before the projector is installed on the pole.*


Contoured Bracket Base
Extron MDA EQ Series Mini Distribution Amplifier
Power Supply
Extron PMK 300 Multi-product Projector Mount Kit
U-bolt

***Mounting the MDA EQ using the PMK 300 with the projector pole passing through the center***



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5. Place the U-bolt around the ceiling pole and insert the two legs of the U-bolt through the round holes in the contoured base, then through the slotted holes in the bracket's mounting plate.
   - **For a typical (1.5" to 2.0" diameter) pole** — You can use the supplied U-bolt, which fits a typical ceiling pole.
   - **For a smaller or larger pole** — Locally obtain a U-bolt that fits your ceiling pole. The slotted holes on the bracket can accommodate a U-bolt for pole sizes from 1.0" to 2.5" in diameter.
6. Secure the bracket to the U-bolt with the included hex nuts.

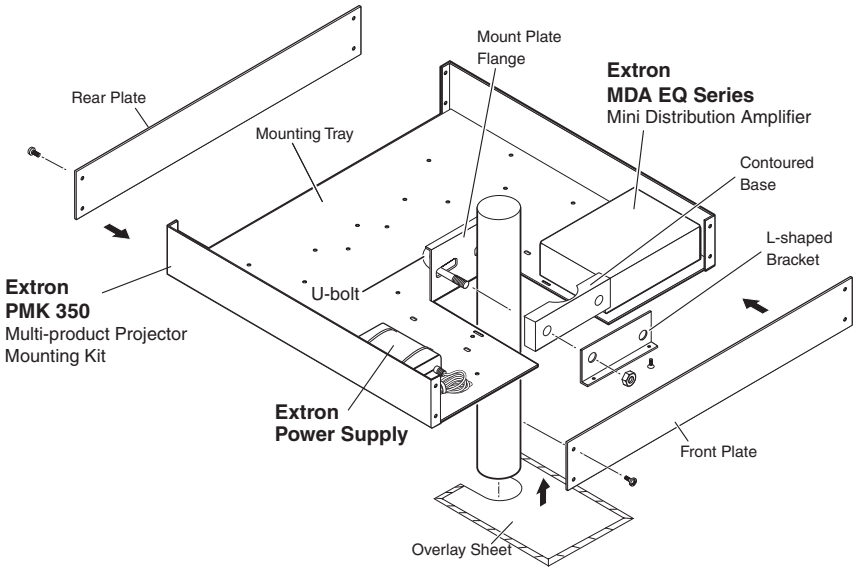
### PMK 350 Projector Mounting Kit

The PMK 350 Low Profile Projector Mounting Kit is an above-projector mounting kit that attaches to a 1.5" to 2" diameter projector mounting pole. It can hold more than one device, in a variety of sizes.

The PMK 350 is available in black (part **#70-563-02**) or white (part **#70-563-03**).

Follow these steps to mount the MDA EQ on the PMK 350:

1. Remove the front panel from the PMK, using a #2 Philips screwdriver. Retain the four screws to reattach the plate when finished.
2. Remove any rubber feet from the bottom of the MDA EQ.
3. Secure the MDA to one side of the mounting bracket, using two of the supplied 4-40 x 3/16" screws in opposite (diagonal) corners. Use an Extron Tweeker (provided) or a Philips #1 screwdriver to tighten the screws.
4. Using the two included tie wraps, strap the MDA EQ power supply to the PMK bracket.
5. If desired, remove the back panel of the PMK 350 and mount an additional MDA or other device(s) at the back of the bracket, as described in step **3**.
6. Place the PMK 350 mounting tray around the projector ceiling mounting pole. (See the illustration on the next page.)




***Mounting the MDA EQ using the PMK 350 Projector Mounting Kit***

7. Assemble the U-bolt and the following parts in the order they are listed below:
   - **a**. Pass the legs of the U-bolt through the slotted holes on the back of the mount plate flange.
   - **b**. Place the U-bolt legs around the ceiling pole.
   - **c**. Pass the U-bolt legs through the round holes in the contoured base.

     **NOTE** *Place the contoured base against the pole and opposite the mount plate flange. The pole should fit snugly into the depression in the center of the contoured base.*

   - **d**. Pass the U-bolt legs through the round holes in the L bracket.
8. Align the two round holes in the bottom of the L bracket with the two slotted holes in the base of the PMK 350, on either side of the opening for the pole; and attach the L bracket to the base by inserting the two provided 6-32 x 5/16" screws through the aligned slots. Tighten the screws slightly; you should still be able to slide the L bracket to adjust it as needed.



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9. Move the PMK 350 up to the desired location on the ceiling pole, as close to the ceiling as desired.

10. Secure the L bracket to the U-bolt, using the included hex nuts. Hand-tighten the hex nuts, make any final adjustments to the PMK's position, then tighten the hex nuts securely, using an 11/16" deep socket or box-end ratchet wrench.

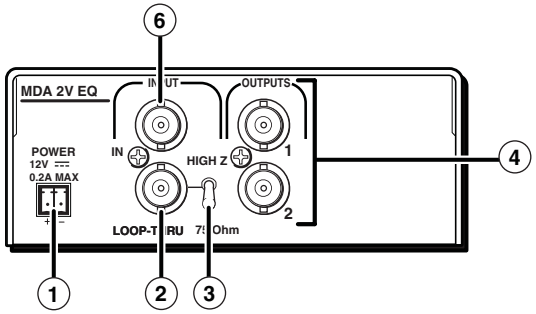
**NOTE** *Be sure to tighten the hex nuts securely enough that the PMK 350 does not slide down the ceiling pole.*

11. Secure the front panel to the mounting tray with four of the included #6 screws.

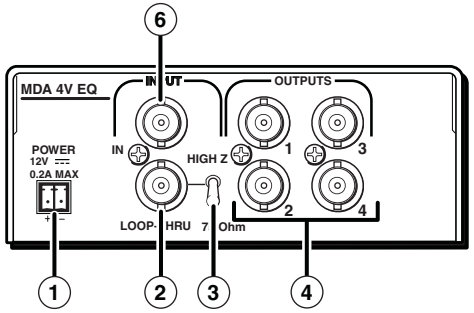
12. If desired, tear out one of the four perforated self-adhesive overlay sheets, and apply it to the underside of the mounting tray.

## Rear Panel Features and Cabling

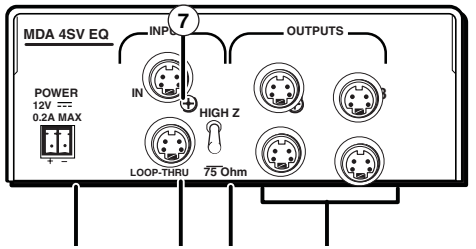
The following figures show the back panel configurations of the three MDA EQ models.




***MDA 2V EQ rear panel***




***MDA 4V EQ rear panel***




***MDA 4SV EQ rear panel***

(1) **Power connector —** Plug the external 12 VDC power supply into this 2-pin, 3.5 mm captive screw connector. The power supply is included with the unit.

**NOTE** *The power connector on the rear panel is orange; however, the plug for the power cord may be either orange or blue. Either color plug can be connected to the rear panel receptacle.*

To wire the connector:

1. Cut the DC output cord to the length needed.

2. Strip the jacket to expose **0.2" (5 mm)** of the conductors for the **blue** captive screw plug, or **0.3" (7 mm)** for the **orange** plug.

**WARNING** *Exposing more than the amount of copper wire described above could allow the stripped wires to touch each other, causing a short circuit. This could result in the external DC power supply overheating and/or burning.*

**NOTE** *Stripping the wires to expose **less** than the recommended amount causes them to slide out of the connector too easily, even if they are tightly pinched by the captive screws.*

3. Slide the leads into the supplied captive screw plug and lock them, using an Extron Tweeker (small screwdriver).

4. Use the supplied tie-wrap to strap the power cord to the extended tail of the connector.

5. To verify the power cord's polarity before connecting it, plug in the power supply with no load and check the output with a voltmeter.



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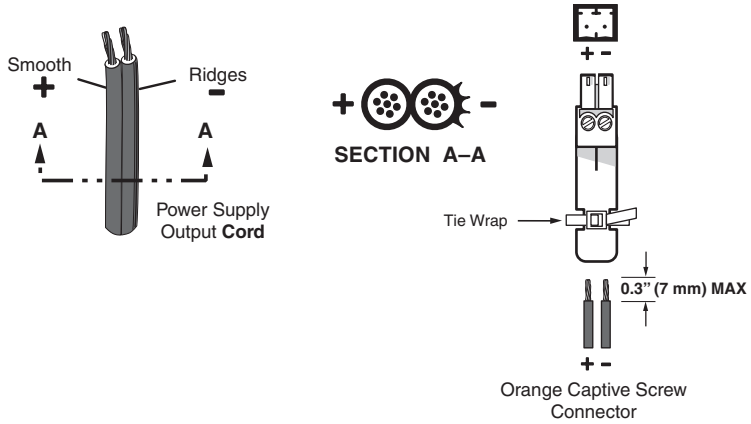
The figure below shows how to wire the connector.




***Power connector wiring***

**NOTE** *Your MDA may have shipped with a blue captive screw plug. The blue connector does not have the extended tail or the included tie-wrap.*

**CAUTION** *Do not tin the stripped power supply leads before installing the captive screw connector. Tinned wires are not as secure in the captive screw connectors and can be easily pulled out. They may also break after being bent several times.*

**WARNING** *The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.*

Alternatively, an Extron P/S 100 Universal 12 VDC Power Supply can power up to 10 MDAs or other Extron 12 VDC devices using only one AC power connector.

(2) **Passive Loop-Thru connector** — Connect a monitor (optional) to this female BNC connector (composite video) or 4-pin mini DIN connector (S-video).

(3) **Toggle switch** — Set this switch to HIGH Z if a monitor is plugged into the Passive Loop Thru connector. Setting this switch to 75 OHM simulates a monitor when none is attached to the Loop Thru connector.

(4) **Output connectors (composite video)** — Connect up to two (MDA 2V EQ) or four (MDA 4V EQ) composite video devices to these BNC connectors.

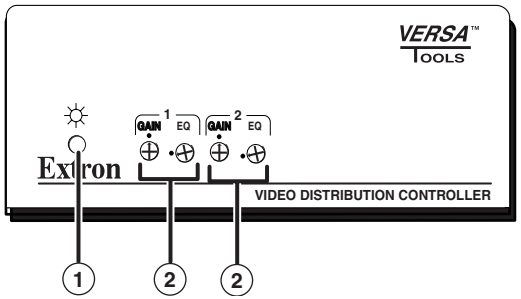
(5) **Output connectors (S-video)** — (MDA 4SV EQ) Connect up to four S-video devices to these 4-pin mini DIN connectors.

(6) **Input connector, composite video** — Connect a composite video input source to this BNC connector.

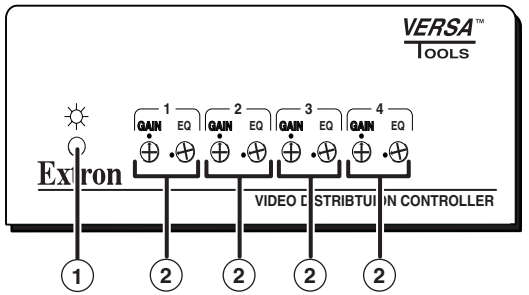
(7) **Input connector, S-video** — Connect an S-video input source to this 4-pin mini DIN connector.

## Front Panel Features and Operation

The following figures show the front panel configurations of the three MDA EQ models.




***MDA 2V EQ front panel***




***MDA 4V EQ front panel***



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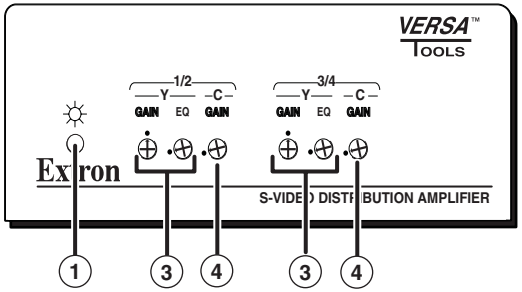


***MDA 4SV EQ***

1. **Power indicator LED —** This LED, when lit, indicates that the MDA EQ is receiving power.

2. **Gain and Equalization potentiometers —** (One set for each output for MDA 2V and 4V EQ; one set for each pair of outputs for MDA 4SV EQ) Use an Extron Tweeker (provided) or other small screwdriver to rotate these potentiometers to adjust the gain and equalization for optimization of the image over the output cable.

3. **Gain and Equalization potentiometers (luma**) — (MDA 4SV EQ only; one set for each pair of outputs) Use an Extron Tweeker to rotate these potentiometers to adjust the luminance gain and equalization for optimization of the image over the output cable.

4. **Gain potentiometer (chroma)** — (MDA 4SV EQ only; one for each pair of outputs) Use an Extron Tweeker or other small screwdriver to rotate this potentiometer to adjust the chroma gain for optimization of the image over the output cable'.



# Appendix A

## Specifications, Parts, and Accessories

Specifications

Models

Included Parts

Optional Accessories



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# Specifications

## Video

Gain

| | |
|---|---|
| Video and Y | -1 dB to +3 dB (x 0.9 to x 1.4)), adjustable per output* |
| C (chroma) | 0 dB to +10 dB (x 1 to x 3) |
| Equalization | 0 dB to +6 dB (x 1 to x 2) at 5 MHz, adjustable per output* |

**Per output for composite video; per every two outputs for S-video.*

| | |
|---|---|
| Bandwidth | 150 MHz (-3 dB) |
| Output cable driving distance | Up to 1000' (300 m) with Mini HR cable, up to 1500' (450 m) with RG6 or RG59 cables |

## Video input and loop-through

Number/signal type

| | |
|---|---|
| MDA 2V EQ, MDA 4V EQ | 1 composite video input, 1 passive composite video passive loop-through |
| MDA 4SV EQ | 1 S-video input, 1 passive S-video passive loop-through |

Connectors

| | |
|---|---|
| MDA 2V EQ, MDA 4V EQ | 1 female BNC (input), 1 female BNC (loop-through) |
| MDA 4SV EQ | 1 female 4-pin mini DIN (input), 1 female 4-pin mini DIN (loop-through), |

| | |
|---|---|
| Nominal level | 1 Vp-p for Y of S-video, and for composite video<br>0.3 Vp-p for C of S-video |

Minimum/maximum levels

| | |
|---|---|
| MDA 2V EQ, MDA 4V EQ | 0.4 V to 2 Vp-p with no offset at unity gain |
| MDA 4SV EQ | Y: 0.4 V to 2 Vp-p with no offset at unity gain |

| | |
|---|---|
| Impedance | 75 ohms |
| Return loss | <-30 dB @ 5 MHz |
| DC offset (max. allowable) | 4.0 V, AC coupled |

## Video output

Number/signal type

| | |
|---|---|
| MDA 2V EQ | 2 composite video |
| MDA 4V EQ | 4 composite video |
| MDA 4SV EQ | 4 S-video |

Connectors

| | |
|---|---|
| MDA 2V EQ | 2 female BNC |
| MDA 4V EQ | 4 female BNC |
| MDA 4SV EQ | 4 female 4-pin mini DIN |

| | |
|---|---|
| Nominal level | 1 Vp-p for Y of S-video and for composite; 0.3 Vp-p for C of S-video |
| Minimum/maximum levels | 0.4 V to 2 Vp-p |
| Impedance | 75 ohms |
| Return loss | <-30 dB @ 5 MHz |

## Sync

| | |
|---|---|
| Standards | NTSC 3.58, NTSC 4.43, PAL, SECAM |

## General

| | |
|---|---|
| External power supply | 100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable, to 12 VDC, 1 A max., regulated |
| Power input requirements | 12 VDC, 0.2 A |
| Temperature/humidity | Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing<br>Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing |
| Rack mount | Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01; or VersaTools® rack shelf, part #60-190-20 or 60-604-20<br>Also furniture mountable with optional brackets |
| Enclosure type | Metal |
| Enclosure dimensions | 1.7" H x 4.3" W x 3.0" D (1U high, quarter rack wide)<br>4.3 cm H x 10.9 cm W x 7.6 cm D<br>(Depth excludes connectors.) |
| Product weight | 0.7 lbs (0.3 kg) |
| Shipping weight | 3 lbs (2 kg) |
| Vibration | ISTA 1A in carton (International Safe Transit Association) |
| Listings | UL, CUL |
| Compliances | CE, FCC Class A, VCCI, AS/NZS, ICES |
| MTBF | 30,000 hours |
| Warranty | 3 years parts and labor |

**NOTE** *All nominal levels are at ±10%.*

**NOTE** *Specifications are subject to change without notice.*



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## Models

| Model | Part number |
|---|---|
| MDA 2V EQ | 60-696-01 |
| MDA 4V EQ | 60-697-01 |
| MDA 4SV EQ | 60-698-01 |

## Included Parts

These items are included in each order for an MDA EQ series:

| Included parts | Replacement part number |
|---|---|
| 2-pin, 3.5 mm captive screw connector (blue) | 10-319-15 |
| 2-pin, 3.5 mm captive screw connector (orange) | 10-702-10 |
| Desktop power supply | |
| Tweeker (small screwdriver) | |
| Rubber feet (not attached) | |
| *MDA EQ Series User's Manual* | |

## Optional Accessories

These items can be ordered separately:

| Accessory | Part number |
|---|---|
| 1U, 9.5" Deep Universal Rack Shelf Kit (RSU 129) | 60-190-01 |
| 1U, 9.5" Deep Basic Rack Shelf (RSU 129) | 60-604-01 |
| Extron 1U 6" Deep Universal Rack Shelf Kit (RSU 126) | 60-190-10 |
| Extron 1U 6" Deep Basic Rack Shelf (RSU 126) | 60-604-10 |
| 1U 3.5" VersaTools Rack Shelf kit (RSF 123) | 60-190-20 |
| 1U 3.5" VersaTools Basic Rack Shelf (RSF 123) | 60-604-20 |
| Versa Tools Mini Under-desk Mounting Bracket Kit (MBU 123) | 70-212-01 |
| VersaTools Mini Projector Mounting Kit (PMK 100) | 70-217-01 |
| VersaTools Multi-product Projector Mounting Kit (PMK 300) | 70-374-01 |
| VersaTools Multi-product Projector Mounting Kit (PMK 350) | 70-563-02, -03 |
| SVHSM-BNCF adapter | 26-353-01 |
| BNCM-RCAF adapter | 10-264-02 |



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